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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Evon Llewellyn Crooks

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ALSTON & BIRD LLP

BANK OF AMERICA PLAZA

101 SOUTH TRYON STREET, SUITE 4000

CHARLOTTE, NC 28280-4000

EXAMINER

FELTON, MICHAEL J

ART UNIT

PAPER NUMBER

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MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/675,937	Applicant(s) CROOKS ET AL.	
	Examiner Michael J. Felton	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
 4a) Of the above claim(s) 22-37 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-21 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/19/2007 have been fully considered but they are not persuasive.
2. Regarding the 35 U.S.C. 112 rejection of claims 1-3, the applicant has alleged that claim 1 does not specify the relative position of the first and second region of the compartment, however, the examiner continues to believe that "first" and "second" are terms that indicate relative position (i.e. second follows first). It is the examiners belief that one of ordinary skill would be confused and misinterpret the claim as currently written.
3. Although the applicant is correct that the examiner did address the claim limitation of multiple sections of filter material with different degrees of particulate removal efficiency, it is clear from the illustrations on the first page of Litchfield et al. that the two filter sections 15 and 18, are of different sizes and would clearly have different particulate removal efficiencies (figures 1-3).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 - 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 1, 2, and 3, use the terms "first" and "second" in an inconsistent and confusing manner. Claim 1 describes a first and second filter sections and first and second regions of a compartment. The typical use of these terms is to describe the order of arrangement, however, the applicant causes confusion by saying in claim 3 that the first region is next to the second filter and the second region is next to the first filter. It is unclear if the regions or the filters are rearranged since the terms first and second have become meaningless. The examiner suggests describing the regions as A and B, or some alternative independent of "first" and "second".

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 3, 5-17, 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Litchfield et al. (US 3,079,926) in view of Noznick et al. (US 3,279,476), Keith II (US 3,251,365) and Eichel (US 3,459,194). Litchfield et al. disclose a multi-component cigarette filter that has two conventional filter plugs, a chamber in between them that is split into two compartments by a semi-permeable barrier (made of paper) with each compartment containing absorbing material. Although Litchfield et al. disclose the structure of the instant application, they do not disclose the same materials; fibrous tow (cellulose acetate) for the conventional filter plugs, granular absorbents such as activated carbon, strong or weak base ion exchange resins, etc.

However, Keith II, discloses that cellulose acetate filters do not removal all the harmful constituents of tobacco smoke (col. 2, 15-17). One solution disclosed is to use "well-known absorbents such as activated charcoal, alumina, natural and synthetic clays and silica gel" (col. 2, 23-30), and that these materials can be segregated from the cellulose acetate filter (col. 2, 70-72; col. 3, 1-5). Particle sizes are also disclosed as being between 8 and 50 mesh. Keith II also discloses a structure using two conventional filter plugs and forming a cavity between them, and the filter plugs can be made from plasticized cellulose acetate (col. 4, 7-39).

Noznick et al. disclose that several granular filtering agents are convention in the art, and include activated carbon, silica gel, ion exchange resins, and anion exchange resins (col. 2, 23-41).

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute the conventional materials of Keith II and Noznick in the cigarette filter structure of Litchfield. The motivation to do so would have been to use the more effective modern materials (cellulose acetate, activated carbon, and ion exchange resins) in place of the materials used by Litchfield (paper, granulized animal lung). In addition, Eichel provides motivation for using weak and strong base anionic exchange resins to filter tobacco smoke (col. 3, 31-60).

In reference to claims 2 and 3, it would have been obvious to reverse the order of the absorbent and the ion exchange resins, since it has been held that mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

In reference to claims 7-15, it would have been obvious to optimize the length of each filter component to produce a filter suitable for attachment to a cigarette, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In addition, Eichel discloses a cigarette filter with a length of 38 mm, and that filters for cigarettes are typically 1:3 to 1:2 in relation to the length of the tobacco rod (col. 4, 61-70). Note, that no tobacco rod length, denier, density of filter absorbents is provided in these claims.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Litchfield et al. (US 3,079,926), Noznick et al. (US 3,279,476), Keith II (US 3,251,365) and Eichel

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(US 3,459,194) as applied to claim 1 above, and further in view of the *Kirk-Othmer Encyclopedia of Chemical Technology*, John Wiley & Sons, Inc., 2001, vol. 14, page 12.

The references used in the rejection of claim 1 do not disclose that the ion exchange resin is in granular form. However, as described in the *Kirk-Othmer Encyclopedia of Chemical Technology*, ion-exchange resins are typically made in granular form. "With few exceptions, resins are supplied as small, round beads..."

It would have been obvious to one of ordinary skill in the art at the time of invention to use ion exchange resins in their granular form because they are typically produced in granular form.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Litchfield et al. (US 3,079,926), Noznick et al. (US 3,279,476), Keith II (US 3,251,365) and Eichel (US 3,459,194) as applied to claim 1 above, and further in view of Frund (US 5,714,126). The references used in claim 1 do not disclose the activity of the activated carbon. However, Frund discloses using activated carbon to remove harmful gasses, with an activity of at least 95 Carbon Tetrachloride Acitivity (col. 2, line 6).

It would have been obvious to one of ordinary skill in the art at the time of invention to have used carbon with sufficient activity, as disclosed by Frund, to achieve removal of harmful gasses in the cigarette smoke.

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Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Felton whose telephone number is 571-272-4805. The examiner can normally be reached on Monday to Friday, 7:30 AM to 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJF


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700